DR. GEORGE BACHMAN GIVES TESTIMONY TO SHOW HARRIS SIMPLY HAZARDED A GUESS

Professor of Physiology at Atlanta College of Physicians and Surgeons Declares Dr. Harris Is the Only Doctor He Knows Who Would Undertake to Express the Opinion That Dr. Harris Did in Reference to Mary Phagan's Death

FRANK A NORMAL MAN, SAYS DR. T. H. HANCOCK WHO TOOK WITNESS STAND MONDAY AFTERNOON

Herbert G. Schiff, Frank's Young Assistant, Was Under Cross-Examination Several Hours Monday—He Said He Had Never Heard Complaint That Factory Clock Ran Five Minutes Fast and Denied That Frank Had Objected to His Firing Conley

Only two witnesses were examined at the Monday morning session of the trial of Leo M. Frank, charged with the murder of Mary Phagan. They were Herbert G. Schiff, assistant superintendent of the factory, who was under cross-examination the greater part of the morning, and Dr. George Bachman, professor of physiology in the Atlanta College of Physicians and Surgeons.

Dr. Bachman declared that Dr. H. F. Harris was the only physician he ever heard of who would express such an opinion as Dr. Harris had given from the witness stand previously. He said that an opinion as to the length of time that food had been in the stomach under most any circumstances would be but a hazardous guess, and that it would be utterly impossible to determine how long since food had been eaten by a post-mortem examination made nine or ten days after death of a body that had been embalmed. The embalming fluid, he declared, would add seriously to the difficulties of forming a correct opinion. The sum and substance of Dr. Bachman's testimony was that it was impossible to fix the time of little Mary Phagan's death by any analysis or examination of the food that was found in her stomach.

Dr. Bachman was not asked to testify in reference to Dr. Harris' declaration that Mary Phagan had suffered violence prior to her

death, but it is probable that some of the experts who follow him will be asked in reference to this feature of the case.

Dr. T. H. Hancock, of the Atlanta hospital and part owner of that infirmary, was called by the defense as its first witness after the resumption of court Monday afternoon.

Dr. Hancock testified regarding a thorough physical examination which he made of Leo M. Frank, the accused, certifying that in every way so far as he could determine Frank is like other men in his physique.

During the afternoon other physicians are expected to take the stand in further refutation of Dr. Harris' testimony. Dr. Willis Westmoreland, Dr. Thomas H. Hancock, and Dr. J. C. Olmstead have all been subpenaed, and each will give testimony, it is said, similar to that of Dr. Bachman.

Although Herbert G. Schiff was under cross-examination many hours, very little was developed by his testimony. He admitted that Frank might have had time to do considerable work on the financial sheet Saturday morning but steadily maintained that from two and a half to three hours would be required for the work and that Frank was accustomed to make up the sheet on Saturday afternoon.

Solicitor Dorsey asked the witness if he did not know that the time clock at the factory ran about five minutes fast, and Schiff replied that he had no such knowledge. He also vigorously denied that he had sought to discharge the negro Jim Conley on account of his worthlessness and Superintendent Frank had objected. He admitted having seen blood spots on the office floor and that one of them had been smeared over with a white substance which looked like hascoline. On redirect examination, however, the witness declared that it was impossible to tell whether the hascoline had been smeared on top of t[h]e spots or the spots on top of the hascoline.

A disposition to hurry the trial of the Frank case as much as is consistent with justice, and even perhaps to attempt its

conclusion this week, was indicated by Judge Roan, presiding, Monday afternoon, when shortly before court convened he stated privately that unless there was objection, he probably would hold court until dark Monday afternoon, which would mean until about 6:30 o'clock instead of till 5:30 as heretofore. Judge Roan stated, however, that he had not made up his mind on this point.

Through Deputy Sheriff Plennie Minor it was learned that the jurors are in accord with this longer day plan of the judge.

For about ten minutes Monday morning before court convened Leo M. Frank, accused of the murder of Mary Phagan, examined the model of the pencil factory where the murder occurred and which has been introduced in evidence by his lawyers. The accused first obtained permission of the sheriff, and then in care of a deputy sheriff he entered the press anteroom, where the model had been stored, and looked over it carefully, paying particular attention to the representations of his office and the elevator shaft adjoining it. He made no comment.

At 9 o'clock Monday morning the Frank trial resumed, beginning its third week. With the defendant in court were his wife and his mother and an aunt-in-law, Mrs. Jacob Selig, with whom he had spent about half an hour chatting in a room adjoining court. The court room was filled again with spectators, many others being held back at the doors for lack of room inside.

SCHIFF TAKES STAND.

Herbert Schiff, assistant superintendent, resumed his place on the stand under cross-examination by the state. Solicitor Dorsey asked Schiff a number of questions concerning the financial sheet of the factory.

"This is the only paper that was worked on Saturday, is it not?" asked the solicitor.

"Yes," replied Schiff.

"How do you know it was done Saturday?"

"I didn't give him the data until Saturday."
"You did give him some of it before Saturday, though, didn't you?"
"No, sir."

There followed a number of questions regarding the composition of data for the sheet, and Schiff admitted that he gathered the details from the forewomen and foremen of the several departments and made the preliminary calculations preparatory to entering them on the financial sheet. The packing report, in the handwriting of Miss Eula Mae Flowers (according to the witness), was explained by Schiff to the jury as a sample of all the reports handed to him by the heads of departments.

"Was it necessary for Frank to wait till Saturday in order to get this data from you? Couldn't he do it as well himself?"
"I suppose he could do it. He never has done it before, though."
"Don't you know that he's an expert?" asked the solicitor, pointing to Frank.

"No, sir."

"Don't you know that he's such an expert that you haven't been able to make up a financial sheet since he left the factory?"

NOT AN EXPERT.

"No, sir. I don't consider him such an expert. It isn't so much because we can't make up financial sheet without him as that we haven't had the time and opportunity to do it."

There followed more questions of a technical nature about the financial sheet. The solicitor endeavored to gain the admission from Schiff that the preparation of the sheet would not require so long as had been represented. In answer to questions, Schiff said that the work Frank did on the financial sheet was no more complex than the calculations he had to make himself, Schiff answered all questions promptly and fully—so fully, in fact, that Solicitor Dorsey on several occasions interrupted his answer to put other questions. Once Attorney Arnold interrupted the solicitor with the exclamation, "Give the witness time to answer!" Mr.

Arnold then turned to the witness and said, "Mr. Schiff, take your time. Don't get excited."

Schiff went into details concerning the finance sheet, explaining the entries concerning various brands of pencils.

"Then Frank didn't put all those figures on there?"
"No, just the last two lines."

"Frank would have to have only four [...]

MANY EXPERTS CALLED BY DEFENSE TO ANSWER DR. HARRIS

[...] reports in order to make up the finance sheet?"
"That's all I gave him."

"What else do you think of that he would need?"
"Nothing."

"Don't you know that's all he needed?"
"That's all I think of."

"Do you have any idea when this work on the finance sheet was done?"
"Some time between Friday night and Monday morning."

"Did you see the finance sheet Monday morning?"
"I did not."

"If Frank started to work on the finance sheet at 8:10 Friday morning and worked until 10:30, would he have any trouble finishing most of it in that time?"
"I think not."

"Then if he left at 10:10 and got back at 11, then he would have had a full hour remaining in which to do these other things?"

"Yes. I suppose so."

"Couldn't Frank have done all this in an hour and a half?"

"No, it would have taken him two hours and a half."

"Didn't you hear Frank say he could do it in an hour and a half?"

"I did not."

"This finance sheet and the entering up of the orders were all the work done on Saturday?" [several words illegible]

Schiff said that the record of $2 borrowed from Frank by Arthur White Saturday afternoon was made in Frank's own writing and promised the solicitor to produce that entry in court.

The solicitor brought out from the witness that an average of orders is placed, as a rule, on the financial sheet and last time appeared on the sheet for the week ending just before the murder.

NO BALANCE NECESSARY.

Schiff declared that it was not necessary to balance the sheet.

Solicitor Dorsey forced the witness to admit that he had made a mistake in saying that certain orders must have been entered by Frank on Saturday. The witness admitted that they could have been entered before Saturday.

He had never know of Frank leaving on Saturdays before the financial sheet was finished, said the witness. He said that Frank kept close to his work. After this statement the solicitor asked, "You did hear him say, Friday, that he would try to go to the ball game Saturday afternoon?"
Judge Roan would not permit the witness to draw a conclusion as to whether Frank had finished his work in the morning in order that he might go to the ball game.

"Didn't you say at the coroner's inquest that it would take from one and a half to two hours if the data was ready to make out the financial sheet?" demanded the solicitor.

"No, I said two and a half to three hours," said the witness.

"Didn't you swear before the coroner's inquest that it would take two and a half hours to get up the data and the financial sheet?"

"I don't remember."

"Wasn't this question asked you: ‘It would take two and a half hours to get up the data and the financial sheet?' And didn't you reply, ‘Yes, in the condition that he had it'?"

"If I made that answer, I misunderstood the question."

LOSE THEIR TEMPER.

When the questioning of Schiff began, the solicitor addressed his queries to the witness in a natural tone and the witness answered in like manner. By now, however, the solicitor was raking the witness roughly with his questions, and Schiff was answering loudly and angrily.

"If you swore at the coroner's inquest that it took Frank two and a half hours to get up the data and the financial sheet both and now you say it took a longer time tell the jury why you changed your statement."

"I may have misunderstood the question there. I say now it took him about three hours."

"Well, if he wasn't interrupted it would have been possible for him to complete it all, except about thirty minutes work, by 12 o'clock, wouldn't it?"

"Yes, about that."

"Now, if he wanted to go to a ball game or to chat with a woman, couldn't he have speeded up and finished it in two and a half hours?"
Attorney Arnold objected to the question. Judge Roan sustained the objection. Solicitor Dorsey amended the question and the witness answered, "Not and make it look as good as it does."

"Your opinion is that it took him between two and a half and three hours you say?"
"It is."

IT ALL DEPENDS.

"Every time you saw him make out this sheet he was working on it leisurely and not under pressure, wasn't he?"
"He was doing it like he always did."

"Is Frank faster than you?"

"Yes."
"How much?"
"I don't know."
"Didn't the coroner ask you the difference in the time it would take to make this sheet, as between you and Frank, and didn't you say he could finish it one-half hour quicker than you?"
"I don't think so."

"When you were estimating the length of time it would take, were you talking about yourself or Frank?"

"Frank."

"How long would it take to balance the $39 on the small cash account?"

"I said one and a half hours, before the coroner's jury. But the length of time all depends on whether the account balanced or not."

"What do you say about it now?"

"I say just exactly that it all depends on whether it balances or not."
"How is it you are able to remember so distinctly where you were last Thanksgiving day?"
"The first thing I remembered, I was going to a football game at Athens, but couldn't go. I remembered distinctly telling Conley and the boy to come back to the factory. And I remembered helping Frank take his bundles to the car to go to the B'nai B'rith fair."

"What time did you leave the factory together on Thanksgiving?"

"About noon."

"Where did you go?"
"We walked over to the street car line, and Frank got on his car before mine came."

"Did you go back to the factory that afternoon?"
"No."

SOMEBODY TOLD HIM.

"How do you know where Frank was that afternoon, then?"
"A party told me."
"Oh, then, when you are telling the jury that Frank was at the fair that afternoon, you are only going on what somebody else told you?"

"Yes."

"Do you mean to tell the jury that you were at the pencil factory every Saturday afternoon?"
"I most certainly do. I have a record of never missing a day from my work, except for vacations, for five years."

"Aren't you a baseball fan?"
"I like to see a good game sometimes."

"Well, didn't you go often to the baseball games with Lemmie Quinn?"
"I never was out with Quinn in my life."

"You say there are about 150 girls employed at the factory?"
"Yes."

"And you say that many were paid off Friday afternoon?"
"Yes."

"You say that out of all that number you remember Helen Ferguson being paid off?"
"I do."

"What makes you remember her?"
"I probably could tell you the names of 100 more that were paid off?"

"All right, then, name about twenty-five."

HE NAMED FIFTEEN.

The witness named about fifteen.

"Name some who were paid off on the Saturday before."

"I don't know as I can."

"Why can't you?"
"Because after this murder I searched my memory to recall everything that happened."

"You have no doubt about Helen Ferguson being there?"
"None whatever."

"You say Holloway was there and Frank was there?"
"They were."

"How are your envelopes numbered?"
"From 1 to 200."

"Where are they numbered?"
"Different office boys number them differently though they always put the number near the top sometimes on one side and sometimes on the other."

"Before April 26 how long since you had seen that opening in the Clark Woodenware company?"
"I knew it was there before they left."

"There was no occasion for anybody to go in there, was there?"
"Yes, we stored shellac in there to keep it cool, near the door by the elevator."

"Are you sure there was a door there?"

"Yes."

"But after this murder there were boxes piled all around that door, weren't there?"
"Not that I know of."

"If a body had been dumped in there, the fireman would have passed back and forth constantly by the place where it would

have landed, wouldn't he?"
"Yes, I should say he would."

"Was there any sign of any one having walked near the chute? Did you call the detectives' attention to anything of this kind?"

"I wasn't with the detectives."

ASKED ABOUT BLOOD.

"You noticed that blood on the floor, didn't you?"
"Yes."

"Did it look like a rat's blood or blood from a finger cut, or what sort of blood did it look like?"

"I don't know. It just looked red, like blood."

"This white stuff smeared over it, what did it look like?"
"It looked like hascoline compound."

"It looked like it had been swept over the blood, didn't it?"
"Yes." The answer was given reluctantly.

"What about the open door in what we will call the Conley area—when did you discover that?"
"I saw it on Monday or Tuesday after the murder."

"And there were boxes piled all around there?"
"Yes."
"And you know that that door had been nailed up?"
"Yes."
Mr. Dorsey called the dates of a number of Saturday afternoons, on each of which Schiff claimed that he was at the factory.

"You tell the jury that you know you were at the factory on those dates because you haven't lost any time, don't you?"
"I know I was there."

"You know that the factory closes down on Saturdays at 12 or 12:20, don't you?"
"Yes."

"Then you wouldn't be losing any time if you were not there on Saturday afternoons, would you?"
"I'd consider that I would be."

"Nobody has ever told you to come back Saturday afternoon?"
"They don't have to tell me what to do," answered the witness angrily.

"Where were you on October 15?"
"I don't even know the day of the week."

"Who sets the time clock at the factory?"
"Holloway or I."

DOES CLOCK RUN FAST?

"Is the clock exactly right?"
"Every time I check it, it is."
"Don't you know as a matter of fact that it is run five minutes fast all the time?"
"No, I don't."

"Do you keep liars and unreliable people in the factory?"

"We have some there," answered the witness.

"Then you mean to say it's a custom to keep there people that you can't depend on?"
Mr. Arnold objected.

"I just want to know how they run things there," said the solicitor.

"We haven't time to go into that," said Judge Roan.

"When did you wake up to the fact that Conley was unreliable?"
"The first time I ever saw him, I guess. Besides, I got lots of reports about him from the foreladies."

"Who are some of them?"

"Miss Carson and about twenty-five others."
"Why did you keep him?"
"Because he knew the work."
"Didn't you try to fire him, and didn't Frank keep you from it?"

"No."
"Did you have authority to discharge him?"
"Yes, I did."

"You told the jury that you knew Conley was unreliable the first time you ever saw him two years ago. And yet you've had the authority all the time to fire him?"
"I said around the first time," answered the witness.

Solicitor Dorsey disputed this. "Yes, that's what he said," said Mr. Arnold. "Well, let's have the record on it," said the solicitor. Mr. Arnold spoke again. "It's immaterial," said he. "Let's don't take up time with that."

"I thought we wouldn't want to go into it," said Mr. Dorsey.

Judge Roan called for the record which showed that the witness had qualified his answer by saying, "I guess."

"He hasn't been there all the time," continued Schiff. "He's been in the chain gang two or three times."

"So he's been in the chaingang three times, has he? You know that?"

"I know once I saw him working in front of the factory. And two other times women came to get money to get him out."

"So you say he was in the chaingang, do you?"
"Well, I'm not up on it. I knew that he's been arrested.

MR. ARNOLD OBJECTS.

Mr. Arnold objected to the solicitor's method of examination of the witness. "Your honor, he doesn't cross-examine the witness. He just quarrels with him."

Mr. Arnold continued that it was natural that the witness should not know the difference between the stockade and the chaingang.

Solicitor Dorsey began to examine the witness about the old series of yellow order blanks, like the one on which one of the notes was written. Schiff said that they were to be found on the fourth floor in the packing room and outside the office.

"Now these three places are the only places in which they are to be found?"
"I think so."
"Then they are all on the office floor or above it?"

"Unless they have been swept up in the trash. I've seen them in the basement," said the witness.

"How long since you've seen one of these books in the basement?"

"I have seen them there in the last three months."

"After the murder?"
"Before and after."

"What were you in the basement for, when you saw them?"
"My work carries me there?"
"What do you have to do down there?"
"Well, I have to look over the packing boxes, for one thing. Then I have to see that the sawdust is carried out of the bin to the livery stable next door."

WHERE TABLETS ARE KEPT.

"These other tablets," asked the solicitor, holding up the white ruled sheets. "Where are they kept?"
"All over the factory, in all the departments."

"Who gives them out?"

"I do sometimes."

"Name a person you've ever given them to."

"Well, I gave one to Joe Williams, a negro that works there, once."

"Who else?"
"I gave one to Jim Conley once. He said he wanted to write a letter home, and I gave him a stamp, too."

"Didn't you Jim Conley's home was right here?"

"No, sir, I didn't."

"You knew Conley could write, then, did you?"

"I did."

"You say you would give these tablets to them on the office floor?"
"Yes."

"These negroes wouldn't carry them to the basement, then, would they?"
"They would go down there."

The witness testified in answer to questions that it was the custom of the negroes to eat in the basement frequently right opposite a gas jet near the boiler. He said that on one of these occasions he had seen Jim Conley writing on one of these tablets.

"You say Conley attracted your attention on Tuesday by his actions. Did you tell Frank about it? He was interested in getting the Pinkertons on the case right away."
"No, I intended to take it up to Mr. Darley."

TELLS OF STAIRWAY.

Solicitor Dorsey directed the witness' attention to the stairway leading from the office floor to the upper floors, and asked him if anyone wanting to look from the office floor to the floor above wouldn't have to walk up the stairway a few steps. The witness answered affirmatively, adding in answer to another question that anyone wanting to look from the upper floor to the office floor would have to walk down the same distance.

"You said Conley said on Tuesday that he would give a million dollars to be a white man, did you?"
"I did."

"Did Conley change his appearance after Frank was arrested?"
"I didn't see him."

"Do you know whether White and Denham were working on the fourth floor on April 26?"
"Yes."

"How do you know?"
"Well, people told me."

"It's hearsay evidence, on your part?"
"Yes."

"Were you at the factory when detectives were making experiments as to whether or not the elevator, when it was operated, could be heard on the fourth floor?"
"I was there with some of them."

"Were you there when Sig Montag ran the elevator?"
"He didn't run it."
"Well, you were there, weren't you when it was run under his direction?"
"He was just standing there."

"Who was running it when Detective Starnes and Mr. Hooper went down into the basement one time?"
"I was. I guess."

"Were you there when Jim Conley went through the factory with the detectives?"
"Yes."

ARNOLD TAKES WITNESS.

Directing Schiff's attention to the diagram of the factory, the solicitor asked him to point out the spot where Conley said he dropped the body when he was carrying it. Attorney Arnold objected, unless the solicitor intended to impeach Conley's testimony. The solicitor declared that he did not want to impeach Conley, and withdrew the question. Solicitor Dorsey announced that he finished the cross-examination there, and Attorney Arnold took the witness on the redirect examination. Before Attorney Arnold began his questioning Judge Roan admonished him to be as quick as possible in examining the witness, and Attorney Arnold replied that he intended to proceed with all possible speed.

"What time had this financial sheet usually been made, Mr. Schiff?" asked Mr. Arnold.

Solicitor Dorsey objected. "He's answered that," said the solicitor. Judge Roan said: "Mr. Dorsey, Mr. Arnold wants to know whether he did it in the forenoon or the afternoon." Solicitor Dorsey replied: "He's answered that too."

"When you said it would take two and a half to three hours to make out the data and the financial sheet, and an hour and a half to do the other usual figuring on Saturday, did you mean with or without interruption?"
"I meant without interruption."

SOLICITOR OBJECTS.

Solicitor Dorsey objected. Attorney Arnold said that his object was to show that Saturday, although a half holiday at the factory, was the principal day of work for the office force. Judge Roan allowed the question. The witness replied that there were quite a few interruptions usually on Saturday afternoons, from traveling salesmen, members of the Montag family, employees calling to get their envelopes and others.

"When was the first time Frank knew that you didn't get the data ready Friday afternoon?"
"I imagine it was Saturday morning when he phoned to my house."
Solicitor Dorsey objected to question and answer, and was sustained.

"Mr. Dorsey asked you if this finance sheet, made up on April 26, showed a comparison of work and production of other weeks. Do you find such a comparison on other finance sheets?"
The witness examined several finance sheets and said he did not find that comparison.

"Then this finance sheet doesn't differ from those for several months back?"
"It does not."

"State whether these orders are not sometimes acknowledged before the requisitions are made out?"
"They are sometimes."

"In all the years you've been at the pencil factory, did you ever know the finance sheet to be made out at any other time except Saturday afternoon?"
Solicitor Dorsey objected and the form of the question was changed slightly.

The witness replied that Saturday afternoon was the only time he had ever known it to be made out.

NO COMPLAINTS ABOUT CLOCK.

"Have you ever heard any complaints from the employes about the time clock being incorrect?"
"I never did."

"Mr. Dorsey's picture shows nothing in the Clark Woodenware department, does it?"
The witness examined the state's diagram and claimed to find several discrepancies.

"Did Frank ever bring his wife to the factory on Saturday afternoon to assist him in shorthand work?"
"He did, several times."

"That white stuff didn't hid the red spots, did it?"

Solicitor Dorsey objected, and the form of the question was changed. The witness replied that he couldn't tell whether the white stuff or the blood spots was on top.

"This white stuff was scattered all around, wasn't it?"
"Yes."

"They never took much trouble to clean it up, did they?"
"No, they usually just swept over it."

"You were asked by Mr. Dorsey why you didn't fire Jim Conley. State whether or not it is an easy matter to teach new employes."

"it is not an easy matter."

"Then sometimes you kept employes who might not be strictly honest, rather than go to the trouble of teaching new employes how to do their work?"

"That's correct. Yes, sir."

"You were asked if you knew whether Conley could write. Did you know that he was denying he could write?"
"I did not until the detectives came to the factory to investigate that subject."

"They found out at the factory that he could write, didn't they?"
"I think they did, yes sir."

"That basement was a sort of a rendezvous for the negro employes, wasn't it?"
"Yes."

"Jim Conley was familiar with the basement, wasn't he?"
"I should say he was."

WHERE SACKS WERE KEPT.

"Do you know where the empty cotton sacks were kept?"
"Yes."

"Was it inside or outside of the metal room?"
"It was outside."

"Do you know if there were any empty sacks there on Saturday?"
"I know we had gotten a new supply of cotton on Friday, and usually when we got a new supply we took out the empty sacks."

Solicitor Dorsey took the witness for recross-examination.

"You had no objection to coming to my office, did you?"
"No, I offered to come."

"And your employers had hired detectives, and they wanted the factory employes to do everything they could to find the murderer, didn't they?"

CLASH BETWEEN COUNSEL.

Mr. Arnold objected to the question as irrelevant. "Well, you asked him about subpoenas, didn't you?" said Mr. Dorsey. "I simply wanted to show a species of legal duress," returned Mr. Arnold. "You didn't show it," remarked Mr. Dorsey. "I didn't by this witness, for he said he was not subpoenaed," retorted Mr. Arnold, "but I have a number of others. I would have just as much right to subpoena his honor to come to my office, as you would have to subpoena these factory employes to yours."

Mr. Dorsey continued. The witness said he did not remember Frank ever having gone to the ball game on Saturday afternoons. The witness argued with the solicitor over the distance between the pencil factory and Montag's, but the argument was without material result.

"What time Monday did you observe Jim Conley's strange bearing?" asked Mr. Dorsey.

"7:30 or 8 o'clock."

"What time did you go with Detective Starnes to arrest Gantt? After you had observed this suspicious man?"
The witness said at first he didn't remember, but said later it was after the plant had closed down.

"What time did you go with Detective Starnes to arrest Gantt? After you had observed this suspicious man?"
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"What time was it you observed Conley's strange bearing?"
"I don't remember."

"You say that Frank never went to a baseball game or a matinee on Saturday afternoons?"

"Yes, because I was at the factory with him."

"This diagram that I have here doesn't show that pictures hanging on the wall in Frank's office, does it?"
"No."

"Describe those pictures."

"I think of only one, a calendar," said the witness.

"You don't know, do you, whether or not the detectives had found out Conley could write before they went to the factory asking about it?"
The witness said he had no way of knowing.

Another argument followed over the details of the metal room, the witness maintaining that the closing or the opening of the shutters of the windows on the north side of the factory made no very material difference on the light that would be thrown on the blood spots. The witness aid that hascoline is a powder when dry, and a sort of paste when wet. Mr. Arnold questioned the witness again.

"Can you shut off the light at the back of the pencil factory?"
"No, sir."

"Is there any way to keep the metal room dark between 12 and 1 o'clock?"
"There is not."

"Did you ever see Frank talk to Mary Phagan?"
"I did not."

Solicitor Dorsey asked a question.

"Mr. Schiff, the windows on the office floor look out onto the roof of the adjoining building on the north, do they not? And it is open at the back of the building, isn't it?"
"Yes."

PROF. BACHMAN CALLED.

Prof. George Bachman was called as the witness.

The witness testified that he is professor of physiology in the Atlanta College of Physicians and Surgeons. Previously he occupied a similar chair in the Jefferson Medical college, Philadelphia. He talked with a French accent.

"What nationality are you, professor?"

"An American citizen." In answer to another question he said he was born in France and studied physiology there.

"Do you make experiments? Are you one of these bug doctors?" asked Attorney Arnold with a smile.

"I make experiments, but I am not a bacteriologist," said the witness.

"Do you understand digestion, and the functions of the stomach and the other digestive organs?"
"I teach that subject."

After a few other preliminary questions to qualify the witness, Attorney Arnold asked, "How long does it take cabbage to digest, doctor?"

"It takes about four and a half hours before it leaves the stomach."

In answer to another question, the witness said that the major work of digesting cabbage is done in the small intestine instead of the stomach, although its digestion begins in the mouth. He said that bread or biscuit would hardly pass out of the stomach in less than three hours.

WOULD BE A GUESS.

"What time would you put down, professor, to pass out cabbage which had been cooked an hour, mixed with biscuit?"
"It depends on conditions," replied the witness.

"Why can't you formulate a rule on the length of time it will take cabbage and bread to pass out of the stomach?"

"There are too many factors to consider. The digestion might be arrested or retarded in many ways."

The witness testified in answer to a number of other questions by Attorney Arnold that poorly masticated cabbage might have tendency to retain a large share of other food in the stomach, even if the other food was digested. Attorney Arnold then asked: "It would be a wild guess, wouldn't it, professor, to state

absolutely the length of time that food has been in the stomach?"
"It would be a guess; yes."

"Isn't it a fact that only one and one-half per cent of cabbage is acted on in the stomach?"

"About that, yes, sir. It is acted on partly in the mouth."

"What acts on it there?"

"The saliva."

The sample of cabbage taken from the stomach of Mary Phagan by Dr. H. F. Harris was brought into court.

"Does that look like a well masticated piece of cabbage?"
"It looks like it was not masticated at all."

"Would a piece of cabbage in that condition act on the pylorus to prevent food passing out of the stomach?"
"It certainly would."

"As to degrees of acidity in the stomach, the acidity may rise quickly and decline slowly, may it not?"
"Yes, sir."

"When the acidity reaches a certain height, then it begins to descend, does it not?"
"Yes, sir."

"Then if you find thirty-two degrees of acidity in a dead body, how can you tell whether the acidity was on the ascending scale?"
"There would be no way of telling, if the body were dead, although you could tell by tests of the stomach of a living person."

"What acts on food in the small intestines?"

"The pancreatic juices."

"What effect would embalming fluid have on them?"
"It would destroy the ferments."

EMBALMING ADDS TO DIFFICULTIES.

"Then the fact that a body has been embalmed adds to the difficulty of telling how long food has been in the stomach?"
"Yes, sir."

"You investigate the stomach of a person who has been dead, embalmed and interred nine or ten days. You find that bread and cabbage in the condition of this sample. You find the acidity of the stomach to be thirty-two degrees. You find practically no pepsin. You find practically nothing in the lower intestine. Could you, or any chemist or physician, hazard a guess as to how long the food had been in the stomach?"
"Under those conditions it would be impossible to tell."

"Would you predicate any conclusion on the fact that there was no food in the lower intestines?"
"I would not."

WITNESS CROSS-QUESTIONED.

Solicitor Dorsey cross-examined the witness. The witness said he was born in Mulhausen, and is of pure French extraction; that he has been in the United States since 1903 and connected with the Atlanta college for four years. He said that his specialty is physiological chemistry, and that he is an expert chemist so far as chemistry concerns the body.

The solicitor read from a paper, spelling a large number of medical terms.

"After an Ewald test breakfast has been eaten, how long would it be before you could get a positive starch test?"
"You can get a starch test all of the time that digestion is going on."
"Do you mean to tell me," asked the solicitor, "that all medical men do not agree that you get that test at from 35 to 40 minutes?"

The witness said he did mean that, and cited several authorities.

"If you found starch in a stomach, and no aultose or dextrose, how long would you say that the food had been in the stomach?"
"Not very long," said the witness.

"Come down," shouted the solicitor, triumphantly. The witness continued, however, by saying that it depends on the quantity of the food.

Solicitor Dorsey started his questions again, but was interrupted by Mr. Rosser, who stated to the court that he failed to see the connection between an Ewald test breakfast and this case. He declared that it was understanding that this case was dealing with fried cabbage and biscuit. Judge Roan said that Mr. Dorsey had the right to test the witness' knowledge.

"You say you never knew anybody to make any experiments with cabbage?" continued the solicitor.

The witness replied in the affirmative.

"And you never made any yourself?"

"No."
Holding up the samples of cabbage which Dr. Harris had testified were taken from normal stomachs after 40 to 60 minutes, the solicitor asked the witness to assume that they had been taken from normal stomachs after that interval; and holding up the sample taken from Mary Phagan's stomach, asked the witness to state how long by compar[i]son the latter had been in the stomach.

"It might have been in seven or eight hours," said the witness.

"Why do you say that?"
"Well, these large pieces of cabbage might retard greatly the passage of food from the stomach."

"You would have some inflammation to show it if this had been the case, wouldn't you?"
"No."

"How would you account for it not being digested more than it is, if it had been lying in the stomach all that time?"
"I doubt very much if those large pieces would digest at all."
"You are giving us your opinion, then, that these pieces wouldn't digest at all, are you, doctor?"
"It would take a very long time."

CAN'T MAKE ASSUMPTION.

"Assuming that these two pieces of cabbage were cooked and chewed the same way, how long would you say that the cabbage taken from Mary Phagan's stomach had been eaten before death?"
"I can't assume that."

"Why can't you?"
Attorney Arnold interrupted: "Maybe he doesn't believe that these tests were made accurately. Mr. Dorsey can't make him assume it if he doesn't want to."

"Suppose you examine the stomach, that you find digestion progressing favorably, the hydrochloric acid has begun to combine with the food, that the state of the starch corresponds to the cabbage—couldn't you venture an option as to how long the cabbage had been in the stomach?"
"No, I could not."
The witness went into a detailed explanation of why he thought he could not, the main idea being that it would be impossible to determine whether the degree of acidity at the time of the test was on the ascending or the descending scale. He said that with an Ewald test breakfast, 32 degrees of acidity would probably be found thirty minutes after the meal was eaten, on the ascending scale, and on a descending scale probably would be found an hour and a half after the meal was eaten.

"What is the difference between a meal of bread and water and a meal of fried cabbage and wheat biscuit?"
The witness explained in detail the chemical difference.

DR. HARRIS STANDS ALONE.

Attorney Arnold asked the witness some more questions when Solicitor Dorsey had finished.

"Do you know of any doctor except Dr. H. F. Harris, who would venture such an opinion as he has given in this case?"
"I do not."
Court adjourned at 12:45 until 2 o'clock.

Dr. Willis Westmoreland, it was said, would be the next witness for the defense. Dr. T. H. Hancock and Dr. J. C. Olmstead were to follow him at the afternoon session, it was said.